IN THE CLAIMS

1. A method of cleaning a CVD vacuum vessel which has an electrically conductive partition plate which divides an interior of the vacuum vessel into a plasma generating space and a film-deposition processing space, and in the electrically conductive partition plate there is a plurality of through-holes connecting the plasma generating space to the film-deposition processing space, the method comprising the steps of:

feeding a cleaning gas into the plasma-generating space;

generating active seeds by applying high-frequency electric power to electrodes arranged in the plasma-generating space;

feeding the generated active species into the film-deposition processing space through the plurality of through-holes in the electrically conductive partition plate; and

cleaning the film-deposition processing space by the active seeds which have been fed into this film-deposition processing space.

2. The method of claim 1, further comprising the step of maintaining the electrically conductive partition plate at ground potential.

3. The method of claim 1, further comprising the step of heating said electrically conductive partition plate.

4. The method of claim 1, wherein the cleaning gas is one or more types of fluoride gas.

5. The method of claim 4, wherein the fluoride gases are NF3, F2, SF6, CF4, C2F6 and C3F8.

6. The method of claim 1, further comprising the step of adding oxygen gas to the cleaning gas.

7. The method of claim 6, wherein an amount of oxygen gas added is such that the concentration is 60% or less.

8. The method of claim 1, wherein the cleaning gas is O2.

9. The method of claim 1, further comprising the step of adding any of He, Ne, Ar, Kr and Xe to the cleaning gas.

10. The method of claim 3, wherein the heating of said electrically conductive partition plate is carried out within a temperature range which inhibits the adsorption of fluorine onto an inner circumferential face of the through-holes and the surface of the partition plate.

11. The method of claim 10, wherein the cleaning gas is carbon fluoride gas or nitrogen fluoride and the electrically conductive partition plate is heated to 200°C or more.

12. The method of claim 10, wherein the cleaning gas is sulfur fluoride gas and the electrically conductive partition plate is heated to 100°C or more.

13. A method of cleaning a CVD system in which active species are produced by generating plasma inside a vacuum vessel and film is deposited on a substrate accommodated in the vacuum vessel by the active species and material in gas form, wherein said CVD system is configured in such a way that, by providing said vacuum vessel with an electrically conductive partition plate, the interior of said vacuum vessel is divided into two chambers by said electrically conductive

partition plate, and in the interior of one of said two chambers into which the interior of the vacuum vessel is divided, a plasma generating space in which high frequency electrode is arranged is formed, and in the interior of the other chamber a film-deposition processing space in which there is arranged a substrate-holding mechanism on which said substrate is mounted is formed, said CVD system is configured in such a way that in said electrically conductive partition plate there is a plurality of through-holes made to pass through said plasma-generating space and said film-deposition processing space, the plurality of through-holes are formed in such a way that where the velocity of gas flow inside said through-holes is u, the effective length of the through-holes is L and the coefficient of mutual gas diffusion is D, the following condition $uL/D > 1$ is fulfilled, and an interior space is formed therein which is divided off from said plasma-forming space and which communicates with said film-deposition processing space via a plurality of diffusion holes, and said material in gas form is supplied to the interior space of said electrically conductive partition plate from the outside and fed into said film-deposition processing space through said plurality of diffusion holes, and said CVD system introduces into said film-deposition processing space, through the plurality of through-holes formed in said partition plate, said active species which are generated in said plasma-generating space by applying high-frequency electric power to said high-frequency electrodes and thus producing a plasma electric discharge in said plasma-generating space, the cleaning method comprising the steps of:

maintaining the electrically conductive partition plate at ground potential;

feeding a cleaning gas into the plasma-generating space;

generating active seeds by applying high-frequency electric power to electrodes arranged in the plasma-generating space;

feeding the generated active seeds into the film-deposition processing space through the plurality of through-holes in the electrically conductive partition plate; and

cleaning the film-deposition processing space by the active species which are fed into this film-deposition processing space.

14. The method of claim 13, further comprising the step of heating said electrically conductive partition plate.

specie

15. The method of claim 13, wherein the cleaning gas is one or more types of fluoride gas.

16. The method of claim 15, wherein the fluoride gases are NF3 , F2, SF6, CF4 , C2F6 and C3F8.

17. The method of claim 13, further comprising the step of adding oxygen gas to the cleaning gas.

18. The method of claim 17, wherein an amount of oxygen gas added is such that the concentration is 60% or less.

specie

19. The method of claim 13, wherein the cleaning gas is O2.

20. The method of claim 13, further comprising the step of adding any of He, Ne, Ar, Kr and Xe to the cleaning gas.

21. The method of claim 13, wherein the heating of said electrically conductive partition plate is carried out within a temperature range which inhibits the adsorption of fluorine onto the inner circumferential face of said through-holes and the surface of the partition plate.

22. The method of claim 21, wherein the cleaning gas is carbon fluoride gas or nitrogen fluoride and the electrically conductive partition plate is heated to 200°C or more.